



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR 3 — CHART INFORMATION

SECTOR 3

EAST COAST OF BAJA CALIFORNIA

Plan.—This sector describes the E coast of Baja California with adjacent islands, from Cabo Falso to Rio Colorado. The descriptive sequence is NW.

General Remarks

3.1 Winds—Weather.—During the greater part of the year, the weather along this coast is fair and pleasant, the heat of the day in the summer months being made tolerable by the cool nights. The scarcity of rain is compensated by, in some degree, frequent heavy dews. During the winter months, the NW winds pass over the snow-covered peaks and considerably reduce the temperature in the N part of the gulf.

The year is divided into a dry and a rainy season, but the change from one season to the other occurs at varying times. During the dry season, the weather is always fine, the winds blowing in the daytime regularly from between NW and W. At night, these winds are replaced by a light breeze from off the land or a calm. Although the rainy season is said to last from May to November, in reality very little rain falls during this period in Lower California and the land is mostly dry and hot. The rains, except in the S part of the peninsula, occur mostly in the winter months. Summer rains are almost unknown to the N of Isla del Carmen.

Between November and May, the prevailing winds in the gulf are NW. The winds during the remainder of the year are mostly SE. Moderate NW gales, lasting 2 to 3 days, are frequent in the upper part of the gulf during December, January, and February. In the lower part of the gulf, SE gales may be expected during the rainy season, May to November.

A local hurricane, known as El Cordonazo, blows with great violence in the gulf, but there is normally an interval of several years between these storms. The hurricanes occur near the end of the rainy season and are always from between SE and SW. They are of short duration, but have tremendous force and are accompanied by lightning.

Tides—Currents.—In the middle of the gulf, the current normally sets SE, but it is weak and is greatly influenced by the tides. Between Cabo Falso and Isla de la Toruga, the currents are very erratic and dangerous, especially off Isla de la Carmen where there is an inshore set of more than 1 knot. Between Isla de la Toruga and Santa Rosalia, the currents are variable, but attain rates of up to 3 knots at times.

Off Cabo San Lucas, a strong W set may be experienced. Along the shores of the gulf, the rates and directions of the tidal currents depend greatly on the prevailing winds. Towards the head of the gulf, the tidal currents increase in strength and may attain rates of 5 to 6 knots off the mouth of the Rio Colorado.

The tidal range, while being practically normal at the entrance to the gulf, increases rapidly N of 29°N. This is especially true within the channels lying between the islands and the mainland. At the N end of the gulf, the tidal range, which is effected by the seasons and the discharge from the Rio

Colorado, varies between 3.6 and 9.1m. At times, this tidal range causes rocks, reefs, and other dangers to be concealed. Unlike the ocean, there is no swell and usually no sea which would mark these hidden dangers by breakers.

Bioluminescence within the gulf usually appears as large glowing patches. The masses of dinoflagellates causing this curious phenomenon, when viewed in daylight, appear as patches of red-colored water. This bioluminescence mostly occurs during spring and autumn, but can be seen throughout the whole year.

Caution.—The yellow-colored sea snake (*Pelamis*) has been reported to exist in the coastal waters, especially the river mouths, of the gulf. These snakes can inject extremely potent venom when they bite.

Cabo Falso to Bahía de La Paz

3.2 Cabo Falso (22°52'N., 109°58'W.), the S most extremity of Baja California, is marked by a main light, which is equipped with a racon, and fully described in Sector 2.

Cabo San Lucas (22°52'N., 109°53'W.), the outer extremity of a rocky peninsula, is located 4 miles E of Cabo Falso and fronted by two prominent detached rocks. The W rock is 89m high, rounded, and pierced at sea level. The E rock is 68m high and has perpendicular sides. Several other rocks, up to 37m high, fringe the cape.

Bahía San Lucas (22°53'N., 109°53'W.), lying N of Cabo San Lucas, provides good anchorage during NW winds, but is unsafe from July to September when strong SE winds are frequent. The best anchorage is in depths of 11 to 22m within the NW part of the bay, but care is necessary as the edge of the bank is very steep.

The town of San Lucas, a resort, stands at the head of the bay and is fronted by a small harbor. This harbor is protected by breakwaters and the entrance is indicated by a lighted range. A quayed basin, which is used by small vessels, has depths of 0.6 to 7m. It is reported that the front range structure is partially obscured by a hotel.

Cabeza Ballena (22°54'N., 109°50'W.), a rocky and dark gray point, is located 3.5 miles ENE of Cabo San Lucas. This point rises almost vertically to a height of 57m and immediately behind it the land rises to a height of 365m. A conspicuous cone-shaped rock rises from the shore close W of this point. A main light is shown from a concrete tower, 10m high, standing on the point and a tower, marked by a red light, stands 1 mile NW of it.

Between Cabeza Ballena and Punta Palmilla, 9.5 miles NE, the coast remains steep-to with no off-lying dangers. Cerro Colorado, a red hill, rises close to the shore, 1.5 miles SW of Punta Palmilla. This hill is 133m high and is an excellent landmark when viewed from seaward.

It is reported that a white hotel, with very distinguishable lights, stands on Punta Palmilla.

3.3 Bahia San Jose del Cabo (23°03'N., 109°39'W.) is entered between Punta Palmilla and Punta Gorda, 9 miles NE. This open bay is fringed by steep, sandy beaches on which the sea breaks heavily.

Sierra de San Lazaro, 1,558m high, rises to a prominent peak 13 miles NW of the central part of the bay.

San Jose del Cabo (23°03'N., 109°41'W.) stands near the mouth of the Rio San Jose, 3 miles NE of Punta Palmilla. A conspicuous cathedral, with a factory and a chimney standing 0.5 mile W of it, is situated in this town. A prominent custom house, with a striped roof, stands near the shore, close W of the chimney. A main light is shown from a tower with a dwelling, 10m high, standing 1.5 miles E of the cathedral.

Anchorage can be taken almost anywhere within the bay in depths of 11 to 18m and about 0.3 to 0.5 mile from the shore. However, an area lying close S of the custom house, where a deep gully approaches the coast, should be avoided. Considerable swell sets into the bay, especially from May to October, and makes anchoring extremely uncomfortable.

Vessels at anchor can work cargo from lighters, but it was reported (1983) that such operations were no longer carried out.

Punta Gorda (23°05'N., 109°36'W.), a round and rocky bluff, is 15m high and fringed by numerous detached rocks. A prominent flat-topped hill, 95m high, rises 0.5 mile W of this point. A shoal, with a depth of 5.5m, lies about 0.3 mile SE of the point.

Banco Gorda de Adentro (Inner Gorda Bank), with a least depth of 14.6m (1949), lies about 5 miles SE of Punta Gorda.

Banco Gorda de Afuera (Outer Gorda Bank), with a least depth of 62m, lies about 7 miles SE of Punta Gorda.

The coast between Punta Gorda and Los Frailes, 21 miles NNE, is fairly low and rocky without any intermediate prominent points that can be recognized from any distance. Inland, the land rises gradually to the mountain ranges of the interior.

A stranded wreck lies 4.5 miles NE of Punta Gorda.

Boca del Tule lies at the N side of a bold and rocky bluff, 9 miles S of Los Frailes. A light is shown from a framework tower, 10m high, standing in the vicinity of this river mouth.

A dangerous rock was reported to lie about 1.2 miles offshore, about 5 miles S of Los Frailes.

Los Frailes (23°23'N., 109°25'W.) consists of a bold and whitish-colored headland, 125m high, closely backed by a hill, 230m high.

Anchorage, with local knowledge, can be taken in a depth of 16m, rocky bottom, within Bahia Frailes, which lies close S of Los Frailes and is protected from N winds.

Cabo Pulmo (23°27'N., 109°25'W.), located 4 miles N of Los Frailes, is a rocky headland, 15 to 23m high. A hill, 250m high, rises close inland of this cape and forms the E end of a mountain range which has peaks over 600m high. A small boat harbor lies on the S side of the cape.

Several rocks have been reported to lie up to about 1 mile seaward of the cape. A shoal, about 1 mile long, lies 0.7 mile offshore, about 2 miles N of the cape. It has a least depth of 1.8m and breaks.

Caution.—The coast in the vicinity of Cabo Pulmo should be given a berth of at least 2 miles when passing.

3.4 Punta Arena (23°33'N., 109°28'W.) is low and sandy. A main light is shown from a tower with a dwelling, 10m high, standing on the point.

The sea breaks heavily in the vicinity of this point and vessels should give it a berth of at least 0.5 mile when passing.

Anchorage, during N winds, can be taken in depths up to 18m, sand, about 1 mile S of the outer end of the point.

Bahia de las Palmas (23°41'N., 109°38'W.) is entered between Punta Colorada, located 3 miles NW of Punta Arena, and Punta Pescadores, 16 miles NW. This bay is exposed and the village of Buena Vista is situated at its head, 10 miles WNW of Punta Colorada. Anchorage can be taken off this village, but care should be taken when approaching as the depths decrease very rapidly.

Punta Pescadero, the N entrance point, is bold, rocky, and reddish in color. Due to the rocky and irregular bottom in the vicinity of this point, vessels should not approach within 1 mile.

3.5 Bahia de los Muertos (23°56'N., 109°48'W.), a wide and exposed indentation, is entered between Punta Pescadero and Punta Perico, 15 miles NNW. The high land backing the shore of this bay rises to El Palmar, a prominent peak, which is 1,097m high and stands 9 miles WNW of Punta Pescadero.

Anchorage can be taken within the S part of the bay in depths of 11 to 18m, sand, about 0.5 mile offshore.

Punta Perico, the N entrance point, consists of a steep-to and whitish bluff which rises abruptly inland to a hill, 190m high.

Ensenada de los Muertos, a small cove, lies at the N end of Bahia de los Muertos and provides good anchorage to vessels with local knowledge in a depth of 15m. The cove offers complete protection from N winds and seas, and a small cargo loading facility, with a warehouse, is situated here. This facility lies within the jurisdiction of the port authorities at La Paz and cargo vessels are required to give prior notice of arrival.

Punta Arena de la Ventana (24°03'N., 109°49'W.), low and sandy, is located 2 miles NW of Punta Perico. A main light is shown from a round tower, 10m high, standing on this point.

Bahia la Ventana (24°05'N., 109°56'W.), crescent-shaped and deep, is entered between Punta Arena de la Ventana and Punta Gorda, 12 miles NW. The S shore of this bay is low whereas, the W shore rises inland to a mountain range. North El Mulato, 1,167 high, and South El Mulato, 1,263m high, are the two tallest peaks of this range and rise about 7 miles SW of Punta Gorda. A light is shown from a metal framework tower, 11m high, standing on the W side of the bay, 3.5 miles S of Punta Gorda.

Anchorage can be taken in depths of 9 to 15m in almost any part, but it is reported that the bay is sometimes frequented by vessels engaged in pearl fishing.

3.6 Isla Cerralvo (Isla Cerralbo) (24°15'N., 109°52'W.), barren and rocky, is separated from the mainland by Canal de Cerralvo, a wide and deep passage. Both sides of this island, which rises to several high peaks, consist of bold, rocky bluffs with gravel beaches between them. The island is of volcanic origin and has a summit, 771m high.

Piedras Gordas (24°09'N., 109°51'W.), fronted by a reef, is the SW extremity of the island. A light is shown from a metal tower, 11m high, standing on this point.

A light is shown from a metal tower, 7m high, standing on the SE extremity of the island, 3.2 miles ESE of Piedras Gordas. Roca Montana, a shoal patch, has a depth of only 1.2m and lies about 0.8 mile S of the light.

Arrecife de la Foca (Islote Reina), consisting of a group of rocks, lies 4 miles NW of the N extremity of the island. A light is shown from a metal tower, 7m high, standing on this group. The passage separating the group from the N end of Isla Cerralvo is believed to be clear of dangers, but the rocks should be passed at a safe distance. Tidal currents in this passage have been reported to sometimes attain rates of 2.5 knots.

Punta Santa Cruz (24°19'N., 110°05'W.) projects slightly from the coast 5 miles NW of Punta Gorda. A shoal, with a depth of 29m, was reported (1983) to lie about 2 miles ENE of this point. A large, white rock, 15m high, lies at the outer end of a sandy spit which extends 0.5 mile from the shore, 4.5 miles NW of the point.

Punta Coyote, a low point, is located 12 miles NW of Punta Santa Cruz. The coast between is generally bold and rocky with occasional sandy beaches. Inland, the terrain is mountainous and hilly.

Punta San Lorenzo (24°20'N., 110°20'W.), located 5.5 miles W of Punta Coyote, is the NW extremity of the peninsula which forms the E shore of Bahía de La Paz and the S side of Canal de San Lorenzo. A pinnacle rock, with a depth of 13m, lies about 0.8 mile WNW of this point.

Canal de San Lorenzo (24°23'N., 110°18'W.) is the passage separating the N side of the mainland peninsula from the S side of Isla del Espíritu Santo. It is restricted to a width of about 0.5 mile, as defined by the 11m curve, and has mid-channel depths of 11.8 to 19.5m.

Scout Shoal, which is rocky and composed chiefly of loose stones, has a least depth of 2.7m and lies 2 miles NE of Punta San Lorenzo.

Arrecife de San Lorenzo, lying 1 mile NNW of Scout Shoal, is a rocky ledge with a least depth of 2.7m. A wreck, with a depth of 9.8m, lies 1 mile E of this ledge. Swanee Rocks, with a least depth of 1.2m, lie 0.5 mile NE of the ledge.

The tidal currents in Canal de San Lorenzo are strong, sometimes attaining rates of up to 2.5 knots, and, from October to February, even as much as 3 knots.

Caution.—Passage between the shoals and the adjacent shores of Canal de San Lorenzo is possible for small vessels, but is not recommended.

The dangers fringing the fairway of Canal de San Lorenzo are marked by lighted beacons and buoys, but the latter are frequently missing.

3.7 Isla del Espíritu Santo (24°28'N., 110°20'W.) is of volcanic origin and has several prominent peaks. The summit of this large island is 595m high and rises in the N part. With the exception of the shoals extending S into Canal de San Lorenzo and several small islets lying close off its W side, this island is steep-to within 1 mile of the shore. Punta Lobos, a rocky and high point, forms the E extremity of the island. A

light is shown from a metal tower, 9m high, standing close SW of this point.

Isla la Partida, 335m high, lies close N of Isla del Espíritu Santo from which it is now separated by a narrow, shallow channel.

Isla Ballena, barren and rocky, lies close W of the NW part of Isla del Espíritu Santo. A light is shown from a metal framework tower, 7m high, standing at the SE end of this islet.

Punta Dispensa, a rocky bluff, forms the SW extremity of Isla del Espíritu Santo. A prominent red mound, 65m high, rises 0.3 mile N of this point and consists of lumps of lava.

Los Islotes (24°36'N., 110°24'W.), consisting of three flat and steep-to islets, lies about 0.5 mile N of the N extremity of Isla la Partida. A light is shown from a framework tower, 11m high, standing on the largest islet, which is 15m high.

Bahía de La Paz (24°21'N., 110°30'W.), the largest bay on the W side of the Gulf of California, is sheltered on its E side by a peninsula and several islands and on its W side by the mainland coast. It is deep and clear of dangers, except at the head where depths of less than 5m lie up to 1 mile offshore in places. The bay can be entered from the E through Canal de San Lorenzo or from the N through the wide passage lying between Los Islotes and Cabeza del Mechudo, 19.5 miles NW.

Roca Lobos (24°17'N., 110°21'W.), 4m high, lies 0.5 mile offshore, 2.3 miles SSW of Punta San Lorenzo. It is steep-to on the W side and fringed by foul ground on the E side. A light is shown from a framework tower, 9m high, standing on this rock.

Isla San Juan Nepomuceno (24°16'N., 110°20'W.), a steep island, lies 2 miles S of Roca Lobos and is connected at its N end to the mainland by a causeway. A road runs along the causeway and an airfield is situated on the island. Two ruined piers extend from the E side of the island near its S end. A shoal, with a depth of 7.3m, lies 0.3 mile S of the S end of the island and a lighted buoy marks the 5m curve in this vicinity.

Bahía de Pichilingue (24°16'N., 110°19'W.), a small and sheltered bay, lies on the E side of Isla San Juan Nepomuceno. It is entered between the S end of the island and the mainland. Although small in extent, this bay forms one of the best protected harbors on the coast and is used extensively as an anchorage by vessels too large to enter Puerto de La Paz. The fairway leading to the anchorage is clear with mid-channel depths of 9.1 to 14.6m.

A terminal in the bay includes facilities for general cargo, bulk, container, and passenger vessels. It consists of a berth, 200m long, with a depth of 10m alongside.

A fishing harbor is situated at the head of the bay and has a jetty, 100m long, with depths of 5 to 6m alongside.

A ro-ro ferry terminal, which consists of two ramps and a lifting platform for the loading and unloading of vehicles, is situated at the E side of the bay and has a depth of 8m alongside. An L-shaped jetty, 120m long, is situated about 0.3 mile SE of the ferry terminal.

Punta Prieta (24°13'N., 110°18'W.), a vertical and dark bluff, is located 2.5 miles SSE of the S end of Isla San Juan Nepomuceno and fronted by a rocky shoal, which extends up to about 0.3 mile SW. Monte Santa Maria, a prominent hill, is 473m high and rises 3 miles ENE of the point. A main light is

shown from a framework tower on a dwelling, 9m high, standing on the point.

A tank farm and a prominent power station are situated on Punta Prieta. An outfall pipeline, marked by a lighted buoy, extends about 0.2 mile seaward from the shore fronting the power station.

A T-head pier, used for bunkering, extends from the shore on the S side of Punta Prieta. It has a berth, 40m long, with a depth of 8m alongside.

Puerto de La Paz (24°10'N., 110°19'W.)

World Port Index No. 15920

3.8 Puerto de La Paz, the largest and most important harbor on the E side of Baja California, lies 3.5 miles S of Punta Prieta.

Winds—Weather.—Winds from the SE and SW are fairly regular within Bahía de La Paz for the greater part of the year, but NW winds predominate from November to May. These winds, which blow from about 0900 to 1600, are succeeded toward evening by S winds that last all night. Calms are frequent during the spring and summer months.

The climate is hot and dry and hurricanes sometimes occur between September and November.

Tides—Currents.—Tides rise about 0.9m at springs and 0.6m at neaps, but are influenced by the wind.

The tidal currents within the harbor usually attain rates of 2 knots, but are greatly influenced by the wind. A current with a rate of 6 knots has been experienced off the pier which fronts the city.

Depths—Limitations.—Canal de La Paz, the entrance channel, is entered 0.4 mile ESE of Punta Prieta. It is 3.5 miles long and extends close inshore between the mainland and the E side of a large, shallow spit. The port area lies in the entrance to Ensenada de La Paz, a large and shallow lagoon. Vessels not exceeding 100m in length and 3.9m draft can enter at any stage of the tide.

Muelle Fiscal, a T-headed pier, fronts the city. Its main berth is 67m long and has a depth of 5m alongside.

There is a T-headed bunker pier at Punta Prieta with a length of 40m and an alongside depth of 8.3m.

Vessels too large to enter the harbor usually anchor within Bahía de Pichilique and work cargo using lighters.

Aspect.—The city is situated on flat land, but the cathedral and several other buildings, which are prominent from seaward, stand on a low tableland behind it.

Canal de La Paz, the entrance channel, is marked by lighted buoys and lighted ranges, which may best be seen on the chart.

Pilotage.—Pilotage is compulsory for all foreign merchant vessels. Pilots can be contacted by VHF and board about 0.3 mile S of Punta Prieta. Pilotage at night is available with prior arrangements, but it is not advisable to attempt to enter the harbor after dark.

Anchorage.—Vessels awaiting a pilot can anchor in depths of 12 to 18m to the S of Punta Prieta. The anchorage farther SW is exposed and subject to swells. Anchorage is available within the harbor in depths of 5 to 6m, mud, about 0.5 mile SW of Muelle Fiscal.

Caution.—The alignment of the lighted ranges does not accurately indicate the centerline of the fairway and caution must be used.

A dangerous wreck, which may best be seen on the chart, lies in the S part of the port area and is marked by a lighted buoy.

3.9 El Mogote (24°11'N., 110°19'W.), a low and sandy peninsula, fronts the N side of Ensenada de La Paz, the shallow lagoon, which forms the inner part of Puerto de La Paz.

The coast between El Mogote and Punta Coyote, 27 miles NW, is low and sandy for the first 12 miles. The remaining part is backed by a long tableland, 150 to 300m high, and faced with cliffs, 15 to 30m high.

Punta Coyote (Punta de los Reyes) (24°28'N., 110°42'W.), 46m high, is a perpendicular, white, and rocky bluff. A prominent dark peak, 436m high, rises 5.5 miles S of this point.

San Juan de la Costa (24°23'N., 110°42'W.) (World Port Index No. 15915), a small port complex, lies 2.8 miles S of Punta Coyote. It is used exclusively for the export of phosphates and is administered from Puerto de La Paz.

Depths—Limitations.—A T-head jetty, which is exposed to E winds, extends 0.2 mile from the shore. It has a berthing face, 184m long, with a depth of 10.1m alongside. Vessels of up to 40,000 dwt and 9.7m draft can be accommodated.

Aspect.—A main light is shown from a metal truncated tower, 7m high, standing near the complex.

Pilotage.—Pilotage is compulsory. Pilots can be contacted by VHF through La Paz and board between 1 and 2 miles E of the pier. Berthing can only be carried out in calm weather.

Anchorage.—Anchorage can be taken, over a bottom of sand, SE of a lighted buoy, which is moored about 1 mile SE of the berth.

Cabeza del Mechudo (24°47'N., 110°40'W.), the W entrance point of Bahía de La Paz, is located 20 miles N of Punta Coyote. It is formed by a bold, perpendicular cliff, 91m high, and surmounted by a dome-shaped hill, 229m high. Cerro de Mechudo, the only prominent peak in this vicinity, is 1,119m high and rises 3.5 miles W of this point.

Bahía de La Paz to Bahía Concepcion

3.10 Punta San Everisto (24°55'N., 110°42'W.), 40m high, is a rocky headland which projects 1 mile from the coast, 7 miles NNW of Cabeza del Mechudo. A light is shown from a framework tower, 9m high, standing on this point.

Vessels with local knowledge can anchor in depths of 9 to 11m within a cove which is entered close S of the point.

Punta Nopolo (25°01'N., 110°46'W.), a rocky cliff, is located 7 miles NNW of Punta San Everisto and has a peak, 481m high, rising close behind it. The coast between is high and precipitous.

Canal de San Jose (25°00'N., 110°43'W.), a deep channel, separates Isla San Francisco and Isla San Jose from the coast. It can be used to avoid the heavy seas found outside the islands, but at night or in thick weather, vessels should favor the W

side, which is free of off-lying dangers. The currents setting through this channel attain rates of 1 to 3 knots.

Isla San Jose (24°58'N., 110°38'W.), an island of volcanic origin, rises to a conspicuous summit, 633m high, near the center. A prominent and sharp peak, 426m high, rises 1.8 miles S of the N extremity of the island.

Punta Colorada is located 2.5 miles NW of Punta Roja, the prominent E extremity of the island. A light is shown from a framework tower, 11m high, standing on this point. Punta de los Ostiones is located on the W coast of the island, 4 miles S of its N extremity. A light is shown from a framework tower, 9m high, standing on this point.

The S coast of the island consists mostly of a sandy beach which extends W to form a low and sandy spit. Bahia Amortajada is entered between this sandy spit, which forms the SW extremity of the island, and Punta Salinas, 4 miles NW. A large lagoon lies on the S side of this bay. Well protected anchorage can be taken in a depth of 13m within the S part of the bay or, in depths of 11 to 22m, within the N part of the bay and S of Punta Salinas.

With the exception of the N extremity, which is fringed by a reef extending up to 0.3 mile offshore, the remaining coast of the island is mostly steep-to.

3.11 Isla San Francisco (24°49'N., 110°35'W.) lies 1.5 miles S of the SW extremity of Isla de San Jose and several above-water rocks front its W and NW sides. The SE extremity of the island is formed by a headland, 90m high, which is connected to the shore by a low and sandy neck. Anchorage with local knowledge can be taken in depths of 9 to 18m off a sandy beach lying close W of this point. A light is shown from a truncated tower, 9m high, standing on the N part of the island.

Las Animas (25°07'N., 110°31'W.), a group of islets and rocks, lies about 10 miles E of the N extremity of Isla San Jose. The tallest islet is 27m high. A light is shown from a metal framework tower, 9m high, standing on the group.

Isla de San Diego (25°11'N., 110°42'W.) lies about 5.5 miles N of the N extremity of Isla San Jose. A light is shown from a framework tower, 9m high, standing on this island. A reef, on which the sea usually breaks, extends up to about 0.8 mile seaward from the SW extremity of the island and a rock, awash, lies at its outer end. A shoal, with a depth of 5.5m, is reported to lie about 0.5 mile SW of the outer end of the reef.

Isla Santa Cruz (25°16'N., 110°43'W.), lying 3.5 miles N of Isla San Diego, is barren and 457m high. A light is shown from a metal framework tower, 9m high, standing on the S side of the island.

Caution.—The channel lying between Isla San Diego and Isla Santa Cruz has not been fully examined and should be used only with great care.

3.12 The coast between Punta Nopolo and Punta San Telmo, 19 miles NNW, is backed by a range of mountains. A prominent broken, rocky cliff, 91 to 150m high, projects from the general line of the coast 2 miles N of Punta Nopolo and is known as Los Burros.

Punta Dolores, a similar projection, is located 3 miles N of Los Burros. Bahia de Dolores lies N of this point and is marked on its N side by a prominent red-colored bluff.

Isla Habana (25°08'N., 110°52'W.), 27m high and whitened by guano, lies about 1.5 miles offshore in the vicinity of Bahia de Dolores. The channel leading between this islet and the mainland has depths of 18 to 31m.

Punta San Telmo (25°17'N., 110°57'W.), a sharp point, is 9m high and fronted by detached rocks. It is marked by reddish-colored bluffs on either side. A prominent table mountain, 875m high, rises 6.5 miles W of this point.

Punta San Marcial (25°30'N., 111°01'W.), located 14.5 miles NNW of Punta San Telmo, is formed by a rocky cliff and closely backed SW by a peak, 345m high. It is fronted by above and below-water dangers and should be given a berth of at least 2.5 miles.

San Marcial Rock (25°33'N., 111°01'W.) lies about 1.5 miles NNE of Punta San Marcial. A light is shown from a metal tower, 9m high, standing on this rock.

3.13 Isla Santa Catalina (25°39'N., 110°47'W.), 470m high, lies 13.5 miles ENE of Punta San Marcial and has a prominent summit. No close examination has been made of this island, but its coast is reported to be mostly steep-to. A light is shown from a metal framework tower, 11m high, standing on the S extremity of the island.

An isolated shoal, with a depth of 33m, is reported to lie about 6 miles S of Isla Santa Catalina.

Isla Monserrate (25°40'N., 111°42'W.), high and steep, lies 12 miles W of Isla Santa Catalina and 8 miles N of Punta San Marcial. Its shores are generally steep-to, but several above and below-water dangers extend up to 0.2 mile offshore in places. A light is shown from a framework tower, 10m high, standing on the SW side of the island.

Las Galeras, consisting of two rocky islets about 0.3 mile apart, lies 1.7 miles N of Isla Monserrate and is marked by a light.

A dangerous rock, 0.3m high, lies about 1.3 miles N of Las Galeras and is surrounded by foul ground.

3.14 Bahia Agua Verde (25°31'N., 111°05'W.), entered 2.5 miles W of Punta San Marcial, provides anchorage in fine weather to vessels with local knowledge. Punta San Pasquel, the W entrance point of the bay, is a rocky bluff, 103m high. Solitaria, 35m high, is a large, white, and prominent rock which lies about 0.3 mile NE of the point.

Punta San Cosme, located 4 miles NW of Bahia Agua Verde, is formed by a rocky cliff which rises abruptly to a hill, 69m high. A rocky shoal, with a depth of 1.8m, lies about 0.3 mile off the E side of this point. Two sharp and prominent twin peaks, 1,161m high, stand 4 miles SW of the point.

A group of above-water rocks lies about 1.3 miles N of Punta San Cosme. Roca San Cosme, the W most and largest, is 23m high and Roca San Damien, the E most, is 14m high. The passage leading between this group and the mainland should not be attempted without local knowledge.

Punta Candeleros (25°43'N., 111°14'W.), 15m high, is located 11 miles NW of Punta San Cosme and consists of a prominent, steep-to bluff with the land rising abruptly close behind it. The point is marked by a light.

White Rock (Roca Blanca), a high rock surrounded by several smaller rocks, lies about 4 miles SE of this point. The passage lying between this rock and the mainland is clear.

Isla Danzante Primero (25°46'N., 111°14'W.), lying 2.5 miles NNW of Punta Candeleros, is high and barren. This island is divided into two parts, 0.5 mile from its N end, by a foul and shallow channel. Lights are shown from the N part of the island and from the NE and S extremities of the S part.

The channel leading between Punta Candeleros, on the mainland, and Isla Danzante Primero is encumbered by several above and below-water dangers and should be avoided by vessels without local knowledge.

Punta Coyote (25°49'N., 111°18'W.), located 7 miles NW of Punta Candeleros, is a bluff headland, 23m high, fronting the outer end of a peninsula, which is joined to the mainland by a narrow and sandy isthmus. A light is shown from a framework tower, 7m high, standing on the point.

Puerto Escondido (25°48'N., 111°18'W.), a landlocked harbor, lies at the NW side of a small bay, which is entered close W of Punta Coyote, and protected on its E side by the peninsula. A bar fronts the narrow entrance of the bay and has a depth of 2.7m at HW.

A T-head jetty extends E from the W side of the bay and has a berthing face, 91m long, with depths of 7.3 to 11m alongside.

Secure anchorage can be taken by small vessels with local knowledge in depths of 7 to 11m within the bay. There are facilities for yachts, including a marina.

3.15 Isla Carmen (25°58'N., 111°10'W.), a large island of volcanic origin, is marked by a range of prominent peaks along its entire length. The tallest peak is 479m high and rises 6.5 miles SW of the NE end of the island. The E and W coasts of the island, with the exception of Bahia Salinas, consist mostly of steep bluffs. The numerous other small indentations found along the coast are exposed and have no commercial importance.

A light is shown from a truncated tower, 10m high, standing on Punta Arena, the SW extremity of the island.

Punta Baja, the S extremity of the island, is fronted by a shallow, gravel spit which extends up to about 0.3 mile seaward.

The channel leading between the S end of Isla Carmen and Isla Danzante Primero is free from dangers and vessels bound for Loreto from the S frequently use this passage.

Bahia Salinas lies at the NE side of the island and is entered 6 miles SSW of the NE extremity. It provides good anchorage in a depth of 10m, sand over heavy mud, with excellent holding ground and is protected from all winds except those from between SE and SSW. Occasional squalls may be experienced in August and September. Local knowledge is recommended.

A large salt pond lies close N of the head of the bay and is separated from it by a shingle beach. An abandoned settlement is situated on the beach. A disused pier, formerly used for loading salt into lighters, fronts the settlement and has a depth of 5.5m alongside its head. A bank extends W from the E entrance point of the bay and should be given a wide berth.

Punta Lobos, the NE extremity of the island, is fronted by detached rocks. The point is formed by a rocky headland, 38m

high, which is connected to the island by a low and narrow stretch of land. A light is shown from a round tower, 12m high, standing near this point.

Caution.—A dangerous rock, with a depth of 1.3m, lies about 2.8 miles SE of Punta Baja. An extensive shoal, with a depth of 11m, was reported (1965) to lie centered 1.4 miles WSW of this rock.

It has been reported (1995) that Isla Carmen lies 1 mile E of its charted position.

Punta Nopolo (25°55'N., 111°21'W.), located 7 miles NNW of Punta Coyote, is a bold and rocky bluff, 23m high. Inland from this point, the land rises to several high mountains which form the S section of the Sierra de la Giganta. Cerro Giganta, the tallest peak of this range, is 1,766m high and stands 17 miles NW of the point. Pilon de Parras (Sugarloaf), another conspicuous peak of this range, rises 8.8 miles NW of the point and is 1,120m high.

Loreto (26°01'N., 111°21'W.) (World Port Index No. 15900), a small loading port, lies 5.5 miles N of Punta Nopolo. The small town, which includes a mission built in 1697, stands on the banks of a river and is a tourist center. A prominent tower, formerly a lighthouse, stands close E of the town. Vessels work cargo from lighters at the anchorage. Good anchorage can be taken, by vessels with local knowledge, in depths of up to 15m about 0.5 mile offshore, but a heavy sea is raised when NE winds blow with any force. Good anchorage can also be taken in depths of 6 to 13m within 0.5 mile of the beach extending 4 miles N of the town.

3.16 Isla Coronado (26°07'N., 111°17'W.), 282m high, lies 2.5 miles offshore, 7 miles NNE of Loreto. A low spit, composed of sand and stone, extends about 0.8 mile seaward from the SW extremity of the island. The remaining coasts consist of steep, rocky bluffs. During SE winds, excellent anchorage can be taken by vessels with local knowledge on the N side of the spit. A light is shown from a metal tower, 12m high, standing on the SE extremity of the island.

A low islet lies midway between the W side of the island and the mainland. The passages leading W and E of this islet have depths of 5.5m and 8m, respectively, but should only be used by small vessels.

Caution.—It has been reported (1995) that Isla Coronado lies 1 mile E of its charted position.

3.17 Punta Mangles (26°17'N., 111°23'W.), located 11 miles NW of Isla Coronado, is surmounted by a hill, 30m high, and is the S extremity of a series of cliffs, which are 60 to 90m high and composed of various colors. A mountain, 721m high, rises 3 miles W of the point and has a conspicuous double peak. Good anchorage, sheltered from NW winds, can be taken in depths of 9 to 16m, about 0.5 mile offshore to the S of the point.

A group of rocks, awash, lies about 1 mile offshore, 2.3 miles SSE of Punta Mangles.

The coast between Punta Mangles and Punta Pulpito, 14.5 miles N, is mostly steep-to and backed by rocky bluffs. The shore is fronted by several detached rocks and islets which lie up to 0.5 mile seaward in places. The small coves indenting

this section of the coast are exposed and are of little commercial importance.

Punta Mercenarios, located 4.5 miles N of Punta Mangles, consists of a rocky cliff, composed of dark sandstone, which is surmounted by a red conical hill, 158m high.

Punta Pulpito (26°31'N., 111°27'W.), a bold headland, is 140m high and forms the extremity of a peninsula which is connected to the mainland by a low, narrow neck. A triple peak, 500m high, stands 3.7 miles SW of this point and is conspicuous from seaward.

Excellent shelter from NW winds can be taken by vessels with local knowledge within Fondeadero del Pulpito, a small bay lying S of Punta Pulpito. However, the tidal currents have been reported to be strong in this vicinity. Anchorage should be obtained in depths of 9 to 18m, about 0.3 mile offshore.

Bahia de San Nicolas is entered between Punta Pulpito and Punta Santa Teresa, 10 miles NNW, and several streams flow into its S part. A light is shown from a truncated tower, 7m high, standing on Punta Santa Teresa and a prominent peak, 291m high, rises 1 mile SW of it.

Caution.—It has been reported (1995) that Punta Santa Teresa lies 1 mile E of its charted position.

Isla Ildefonso (26°38'N., 111°26'W.), 118m high, is a steep-to and barren island which lies 6 miles N of Punta Pulpito. A light is shown from a truncated tower, 10m high, standing on the N extremity of the island and a reef extends up to about 0.2 mile N of it.

Caution.—It has been reported (1995) that Isla Ildefonso lies 1 mile E of its charted position.

3.18 Punta Colorado (26°44'N., 111°38'W.), a high and reddish-colored bluff, is located 4.5 miles NW of Punta Santa Teresa. Pico Colorado, a prominent peak, is 490m high and rises 4 miles W of the point. Another prominent whitish-colored peak, 742m high, rises 5.5 miles NW of the point.

Punta Concepcion (26°54'N., 111°51'W.), 9m high, is a poorly-defined point located 15 miles NW of Punta Colorado. It is the outer extremity of a peninsula which forms the E side of Bahia Concepcion. Between Punta Colorado and this point, reefs and shoals extend up to 0.5 mile offshore and off-lying patches of red-colored water are frequently observed.

Bahia Concepcion (26°40'N., 111°50'W.) is entered between Punta Aguja, located 2 miles SW of Punta Concepcion, and Punta Gallito, 3.2 miles W. It is narrow, fairly deep throughout, and extends about 22 miles SSE. This bay provides good shelter for vessels with local knowledge.

A light is shown from a truncated tower, 15m high, standing in the vicinity of Punta Aguja and a prominent radio tower is situated 2.7 miles SSW of Punta Gallito.

Depths of only 5.2m have been reported to exist in the entrance to the bay and a rock, with a depth of 5.5m, was reported to lie about 1 mile NE of Punta Gallito, but a careful search for this latter danger proved unsuccessful.

The E shore of the bay consists of sandy beaches backed by gradually rising land in the interior. It is mostly fronted by a bank which extends 0.2 to 0.7 mile seaward. The shore at the head of the bay, which is known as La Pasajera, is low, sandy,

and fronted by a bank extending up to 0.5 mile seaward. The W shore of the bay is very irregular, being marked by several high bluffs with intervening bights and sandy beaches.

Ensenada de Coyote (Coyote Bay) lies on the W side of the bay, 9 miles S of the entrance, and is encumbered by several small islets, reefs, and rocks. This inlet has not been thoroughly surveyed.

During good weather, anchorage can be taken in suitable depths almost anywhere within the bay, but local knowledge is required. With NW gales, a heavy sea sets into the bay and anchorage may be taken in the lee of one of the islets lying within Ensenada de Coyote.

Bahia Concepcion to Punta San Francisquito

3.19 Punta Sombrerito (26°54'N., 111°58'W.) is located 2.5 miles NW of Punta Gallito and at the N side of the mouth of the Rio Santa Rosalia. It consists of a high rock, shaped like a pyramid, standing on a round base. A main light is shown from a square tower with a signal station, 12m high, standing near the point.

Pico Colorado, 255m high, rises 1.2 miles W of the point and its reddish-colored peak is conspicuous. Mulege, a town, stands on the banks of the river, 2 miles above the mouth.

Fondeadero de Mulege, an anchorage roadstead, lies between Punta Sombrerito and Punta Prieta, 0.8 mile N. Vessels with local knowledge can anchor in depths of 9 to 11m, about 0.5 mile offshore. However, this anchorage is very dangerous with strong NW winds.

Caution.—A rock, with a depth of 0.9m, was reported (1972) to lie in the roadstead anchorage about 0.5 mile ENE of Punta Sombrerito.

Bahia de Santa Ines (27°00'N., 111°59'W.), an exposed and crescent-shaped indentation, lies between Punta Prieta and Punta Santa Ines, 9 miles N, and is backed by low, sandy shores. The S part of the bay has depths of 9m close inshore, but the N part is shallow.

A prominent monument stands close to the shore in the central part of the bay and marks the S boundary of the Santa Magdalena Plains. These plains, which extend inland from the N part of the bay, are dry, barren, covered with rocks, and several miles wide. The remains of an extensive irrigation aqueduct can still be seen on the N edge of the plains.

Punta Santa Ines, the N entrance point, is a low and rocky point, which is surmounted by a small hill. A light is shown from a truncated tower, 15m high, standing near this point. Las Barracas, consisting of several conspicuous table-topped hills, rises in the vicinity of the point.

Anchorage can be taken by vessels with local knowledge in depths of 7 to 8m about 0.5 mile offshore, in the lee of Punta Santa Ines.

3.20 Islas de Santa Ines (27°02'N., 111°55'W.), consisting of three small islets surrounded by shoals and rocks, lies centered 3 miles SE of Punta Santa Ines. The passages leading between the islets and the point should not be attempted without local knowledge. Lights are shown from structures, 15m high, standing on the two S most islets.

The coast between Punta Santa Ines and Punta Santa Agueda, 22.5 miles NW, is low and steep-to. Dangers fringing this section of the coast lie within 0.5 mile of the shore.

Punta Chivato, a low point, is located 1.8 miles NNW of Punta Santa Ines and fronted by several detached rocks up to 8m high. A light is shown from a structure, 15m high, standing on the point.

Isla Tortuga (27°26'N., 111°53'W.), 310m high, lies about 22 miles ENE of Punta Santa Agueda. It is hilly, barren, and steep-to. A light is shown from a metal tower, 9m high, standing on the S side of the island and a light is shown from a truncated tower, 9m high, standing on the N side.

3.21 Isla San Marcos (27°11'N., 112°06'W.) (World Port Index No. 15880), high and barren, is located with its S part lying 2.5 miles offshore. The currents in the vicinity of the island are variable, setting principally in accordance with the tides, and attain rates of up to 2 knots.

Shoal banks, with several above-water rocks, extend up to about 1.3 miles seaward from the S extremity of the island and up to 0.5 mile seaward from the N extremity. Lights are shown from structures standing near the N and NW extremities of the island.

A T-headed pier, 366 long, extends seaward from the W side of the island, 1.3 miles N of the S extremity, and is used to load gypsum. It provides a berthing face, 137m long, with a depth of 12.8m alongside.

Vessels of up to 45,200 dwt, 207m in length, and 9.7m draft can be accommodated.

Pilotage is compulsory. Pilots can be contacted by VHF and usually board from a launch off the pier.

Anchorage can be taken in depths of 15 to 18m, sand, about 0.5 mile W of the pier.

Caution.—It has been reported (1995) that Isla San Marcos lies 1 mile E of its charted position.

3.22 Puerto de Santa Rosalia (27°20'N., 112°17'W.) (World Port Index No. 15870), a small ore port, lies 1.4 miles NW of Punta Santa Agueda, and consists of a harbor enclosed by breakwaters.

Winds—Weather.—During the summer, the heat is reported to be excessive.

Tides—Currents.—Tides rise about 1.6m at springs and 1.5m at neaps.

Depths—Limitations.—The entrance between the breakwaters is 128m wide, but the navigable fairway is narrowed to a width of only about 65m by shoals. There are depths of 4.6 to 7.9m in the E part of the harbor, but the W part is very shallow. The main wharf provides 750m of berthage with depths of 5.7 to 6.4m alongside.

Vessels of up to 7.3m draft can be accommodated, but those with a length of over 90m are reported to have difficulty maneuvering within the harbor.

Aspect.—Lights are shown from structures standing at the heads of each breakwater. Two prominent chimneys are situated at the smelting works close N of the town. At night, the glare of the furnaces and the lights of the town are conspicuous.

Range lights lead to the harbor entrance.

Pilotage.—Pilotage is compulsory. Pilots can be contacted by VHF and board off the harbor entrance.

Anchorage.—Vessels can anchor outside the harbor in depths of 13 to 24m, good holding ground, close inshore. A sea is usually raised at the anchorage by the prevailing NW wind, but it is not considered dangerous.

Directions.—Vessels bound for this port are recommended to first make for Isla de la Tortuga and then steer towards the harbor entrance.

Caution.—The wharves within the harbor were reported (1994) to be in poor condition.

3.23 Caleta Santa Maria (27°26'N., 112°20'W.), a small cove, lies 6 miles NNW of Puerto de Santa Rosalia and is exposed to SE winds. The middle of this cove provides anchorage for vessels with local knowledge in depths of 9 to 11m about 0.3 mile offshore.

A prominent monument stands on the coast, 5 miles N of the cove. Las Tres Virgenes, three prominent mountain peaks, stand 14 miles inland from the monument. The S most and tallest peak is 1,995m high.

Cabo Virgenes, 61m high, is located 8 miles NNW of Caleta Santa Maria. It consists of a rocky cliff backed by high land. A light is shown from a tower, 10m high, standing on this cape.

Punta Santa Ana, located 11 miles NW of Cabo Virgenes, is steep and closely backed by hills, up to 120m high.

Bahia Santa Ana (27°39'N., 112°34'W.), a very deep indentation, is entered close W of Punta Santa Ana and provides sheltered anchorage to vessels, with local knowledge, from SE winds.

Punta Trinidad (27°48'N., 112°43'W.), 76m high, is a prominent headland located 13.5 miles NW of Punta Santa Ana. The coast between is steep-to, within 0.5 mile of the shore, and is backed by high bluffs.

Cerro Pico Doble, with conspicuous twin peaks, is 716m high and rises 8.5 miles SW of Punta Trinidad.

Punta San Carlos is located 12 miles N of Punta Trinidad. This low point may be identified by a sharp peak, 1,367m high, standing 12 miles WSW of it. Between Punta Trinidad and this point, numerous patches of reddish-colored water have been observed off the coast.

Between Punta San Carlos and Punta Santa Teresa, 26 miles N, the coast consists of alternating bluffs and sandy beaches. Several small, detached above-water rocks front the shore and lie up to 0.7 mile seaward in places.

Cabo San Miguel (28°12'N., 112°48'W.), located 24 miles NW of Punta Trinidad, is a bold bluff, 46m high. A conspicuous group of mountains, up to 1,068m high, stands 5 miles W of this cape.

Punta Santa Teresa, 12m high, is located 13 miles NNW of Cabo San Miguel. This rocky bluff is surmounted by a hill, 173m high.

A prominent sharp peak, 1,907m high, stands 32 miles W of Punta Santa Teresa and is clearly visible from seaward.

Bahia de Santa Teresa, which is entered close S of Punta Santa Teresa, provides shelter from NW winds. Vessels can anchor in depths of up to 18m within the N part of the bay.

Punta San Gabriel, located 1.3 miles N of Punta Santa Teresa, is a bluff, 14m high, which stands at the NE extremity

of a prominent headland. The ebb current is reported to attain a rate of 4 knots at times off this point.

Bahia San Francisquito is entered between Punta San Gabriel and a point, 1.5 miles WNW, and provides shelter from the prevailing NW and SE winds. Protected anchorage can be taken within the SW part of the bay in depths of 9 to 10m about 0.3 mile from a sandy beach.

Punta San Francisquito (28°28'N., 112°55'W.), a low and rocky bluff, is located 3 miles NW of Punta San Gabriel.

Punta San Francisquito to Punta Bluff

3.24 Bahia de San Rafael (28°29'N., 113°02'W.) is entered between Punta San Francisquito and a point, 16 miles NW. This large and open bay provides good shelter from S winds, but the depths increase rapidly offshore.

Punta de las Animas (28°49'N., 113°14'W.), 23 to 40m high, is located 28 miles NW of Punta San Francisquito and fronted by several detached rocks. Several steep and reddish-colored hills, 90 to 150m high, rise abruptly behind this point and some mountains, over 600m high, stand close inland of them.

Bahia de las Animas is entered between Punta de las Animas and a rocky bluff, 6.5 miles WNW. An islet, 6m high, lies 0.5 mile N of the latter bluff and is connected to it by a rocky shoal. The mouth of a lagoon and several small islets lie in the SW part of the bay. Good anchorage can be taken by vessels with local knowledge in depths of 11 to 22m within the S part of the bay. However, vessels should not approach within 0.8 mile of the mouth of the lagoon.

Bahia de los Angeles (28°55'N., 113°31'W.), lying 11 miles NW of Bahia de las Animas, is almost completely landlocked. It is protected from the N and NE by several islands and islets which are intersected by three deep, safe passages. Vessels without local knowledge should not attempt to enter this bay.

The shores of the bay mostly consist of sandy beaches with one or two rocky bluffs. Montana de Cumbre Redonda (Round Top), 1,048m high, rises on the SW side of the bay, 8 miles W of the E entrance point, and is conspicuous.

The S passage, which is believed to be deep and safe, lies between Punta La Harradura (Roja), a reddish-colored bluff located at the E side of the bay, and Islas Los Gemelitos, two small islets, lying 0.3 mile N. Another deep and safe passage, about 0.5 mile wide, lies between Islas Los Gemelitos and Isla Cabeza de Caballo, a larger islet, which is 69m high and surmounted by a stone monument. A group of islets, 27 to 38m high, lies 2 miles NW of Isla Cabeza de Caballo, but the intervening passage is encumbered by rocks and is not recommended.

The N passage, about 1 mile wide, is deep and safe, but intricate to navigate. It is entered between Isla Smith, the N most islet fronting the bay, and a narrow neck of land projecting SE from the mainland at the W side. Isla Smith is 474m high at its NW end and is flat-topped.

Anchorage can be taken in a depth of 15m off the entrance to a small cove which lies on the W side of the bay, 3.5 miles NE of Montana de Cumbre Redonda.

Caution.—Strong local winds are reported to prevail out of the canyons on the W side of the bay. These winds may be felt up to a distance of 6 miles offshore. At times, the winds are

preceded by a rolling cloud, known as Elephantes, which resembles the trunk of an elephant.

3.25 Punta Remedios (29°15'N., 113°38'W.), located 13 miles NW of the N entrance point of Bahia de las Animas, is low, sandy, and closely backed by hills that rise towards the coastal range. Anchorage can be taken by vessels with local knowledge in a depth of 18m within Bahia de los Remedios, which is entered close S of the point.

Punta Bluff (29°33'N., 113°59'W.), a bold point, is 30m high and located 26 miles NW of Punta Remedios. The coast between consists of an almost unbroken succession of rocky bluffs, 15 to 35m high, which rises to the coastal range close inland.

Sharp Peak, 972m high, rises 6.5 miles WSW of Punta Bluff and is conspicuous. Double Peak, 1,658m high, stands 9 miles S of Sharp Peak and is also conspicuous.

Off-lying Islands

3.26 A chain of islands, consisting of several small and one large island, lies off the coast between Punta San Francisquito and Punta Bluff. This chain is separated from the mainland by Canal de Salsipuedes, in the S part, and by Canal de Ballenas, in the N part.

Isla de San Lorenzo (28°38'N., 112°51'W.), a barren island of volcanic origin, rises to a height of 485m near its S end. A light is shown from a tower, 9m high, standing near the S extremity.

Isla las Animas lies close NW of the N end of Isla de San Lorenzo and is separated from it by a narrow boat passage. A white rock, 6m high, lies close offshore, 1.2 miles E of the NW extremity of this island.

Isla de Salsipuedes, 114m high, lies close NW of Isla las Animas and is separated from it by a channel that has not been examined. A rock, awash, is reported to lie in the middle of the channel.

Isla Raza, a small island, lies 4 miles N of Isla de Salsipuedes. It has been whitened by the deposits of sea birds and is fringed by rocks. A reef fronts the SE end of the island and should be given a wide berth. Anchorage can be taken by vessels with local knowledge in depths of 9 to 15m about 0.3 mile S of the island. Roca Raza, 22m high, is a small white rock lying about 1 mile NW of Isla Raza. A steep-to rock, awash, lies off its SW side.

3.27 Isla Partida (28°52'N., 113°02'W.) lies 4.5 miles NW of Isla Raza. This island rises to two peaks, each about 120m high, which are separated by a narrow strip of land. An islet, 23m high, lies 0.3 mile off the E side of the island. Anchorage, sheltered from NW winds, can be taken about midway between the island and the islet.

Roca Blanca, 53m high, lies 0.6 mile N of Isla Partida. A reef extends about 0.3 mile N from Roca Blanca and a rock, 0.6m high, lies at its outer end.

Canal de Salsipuedes, the passage lying between the above islands and the mainland to the W, is wide and clear with great depths, but a very strong current is usually encountered, especially with an ebb tide and NW winds.

Caution.—The currents in the vicinity of Isla San Lorenzo and Roca Blanca are very strong and sometimes cause heavy tide rips.

3.28 Isla Angel de la Guarda (29°17'N., 113°25'W.), 41 miles long, is a high, rocky, barren, and uninhabited island located with its S extremity lying 9 miles NW of Isla Partida. A range of mountains, 900 to 1,300m high, spans the entire length of the island and has a comparatively low ridge in its central part.

Punta Acanilado (29°34'N., 113°33'W.), the E end of a rocky headland, is 220m high and forms the N extremity of the island. A light is shown from a metal tower, 14m high, standing on this point. Another light is shown from a structure, 14m high, standing on the S extremity of the island.

Isla Estanque, 122m high, lies close off a sharp point located on the S side of the island, 4.5 miles NNE of the S extremity. The narrow passage lying between this islet and the mainland is encumbered by a reef which dries in places. Isla Estanque is fringed by above and below-water rocks.

Punta Rocosa is a bold headland, 159m high, located 12 miles N of Isla Estanque. It lies at the NE end of a spur of the central mountain range. Anchorage can be taken in the S part of the open bay lying between Isla Estanque and this headland. Anchorage, with some protection from NW winds, can also be taken in depths of 9 to 15m close S of the headland.

Puerto Refugio, a sheltered roadstead, indents the N part of the island and lies between Punta Acanilado and several adjacent islets. It consists of two harbors, which are connected by a narrow channel. Both harbors are easily accessible and provide good, well-sheltered anchorage to vessels with local knowledge. The channel leading between the harbors has a depth of 7.3m, but should be used only by small craft.

Isla Granito, 86m high, fronts the E harbor and lies 2 miles NW of Punta Acanilado. A light is shown from the SE end of this islet. Isla Mejia, 261m high and barren, lies 0.5 mile N of the NW extremity of Isla Angel de la Guarda and forms the N side of the W harbor. Another islet, 76m high, lies between the E end of Isla Mejia and the main island to which it is connected by a reef. This islet separates the two harbors, except for a narrow channel. Piedra Blanca, a steep-to and jagged white rock, is 12m high and lies near the center of the E harbor. Anchorage can be taken in the E harbor in a depth of 10m about 0.7 mile S of Piedra Blanca. Anchorage can also be taken in depths of 14 to 22m, S of Isla Granito, but the bottom is mostly rocky. The best anchorage lies in a depth of 11m, sand and shell, in the middle of the W harbor and SW of the SE extremity of Isla Mejia.

Caution.—The strong ebb tidal current is reported to attain a rate of 5 knots in the vicinity of Isla Estanque.

3.29 Canal de Ballenas (29°00'N., 113°23'W.), a deep and clear channel, lies between the W side of Isla Angel de la Guarda and the mainland. Winds from the NW sometimes blow through this passage with great force, raising a heavy sea against which small vessels may have difficulty in making headway. The currents within the channel are also strong, with rates of up to 3 knots having been experienced.

See Sector 4 for off-lying islands located to the E of the above islands.

Punta Bluff to Rio Colorado

3.30 Punta Final (29°46'N., 114°16'W.), located 20 miles NW of Punta Bluff, is a rocky headland with low land extending SW from it. The intervening coast is generally high, steep-to, and rocky. Good anchorage can be taken by vessels with local knowledge in a depth of 16m within Bahia de Calamajue, which lies 14 miles NW of Punta Bluff. A conspicuous red-colored hill rises behind the sandy beach at the head of this bay.

Bahia San Luis Gonzaga (29°47'N., 114°20'W.), an open bay, lies close W of Punta Final and provides shelter to vessels with local knowledge. Vessels should anchor in a depth of 14m about 0.5 mile offshore.

Punta Willard (29°50'N., 114°24'W.), 56m high, is located 8 miles WNW of Punta Final. A small island lies close SE of this point and a light is shown from a structure, 7m high, standing on its E side. Another light is shown from a structure, 12m high, standing about 1.5 miles NW of the point.

Willard Bay, lying close SW of the small island, has depths of 9 to 18m and provides sheltered anchorage to vessels with local knowledge. A lagoon lying near the head is separated from the bay by a narrow strip of sand.

A chain, which consists of three fairly high islets, several above and below-water rocks, and a number of reefs, extends up to 8 miles NNW from Isla de San Luis. A light is shown from a round tower, 10m high, standing on Isla Miramar, the N most islet, which rises to a height of 191m.

Isla San Luis (29°58'N., 114°25'W.), a high island of volcanic origin, lies 3 miles offshore, 12 miles NW of Punta Final. A light is shown from a tower, 10m high, standing on this island. A low, sandy spit, with shallow water lying up to 0.5 mile off both its sides, extends about 1.2 miles seaward from the SW end of the island. Good anchorage can be taken on either side of this spit, but care should be taken to avoid the shallow water. A clear channel, about 1.2 miles wide, leads between the W side of this island and the mainland.

A large rock, 23m high, lies about 1 mile offshore, 5 miles NW of Isla Miramar.

3.31 Punta San Fermin (30°25'N., 114°38'W.), low and sandy, is located 37 miles NNW of Punta Willard. This point is poorly defined, but Rugged Peak, 1,040m high and prominent, rises 11 miles W of it. A light is shown from a metal tower, 12m high, standing near the point.

The coast between Punta San Fermin and Punta Diggs, 27 miles N, is low and sandy. The coastal range, with peaks up to 305m high, stands a few miles inland.

A shoal, with a least depth of 0.3m, was reported (1971) to lie about 6.5 miles SE of Punta Diggs.

Punta Estrella is located 3.5 miles N of Punta Diggs. A light is shown from a round tower, 10m high, standing near this point. A light is also shown from a structure standing about 10 miles S of Punta Diggs.

Punta San Felipe (31°03'N., 114°49'W.), a rocky headland, is located 13 miles N of Punta Diggs and a dark hill, 286m high, rises close behind it. A light is shown from a prominent

round tower with a dwelling, 22m high, standing near this point.

Bahia San Felipe, lying close S of the point, provides shelter from NW winds, but the depths are shallow, being less than 5.5m up to 1 mile offshore. A quay, protected by breakwaters, is situated in the bay and a lighted range indicates the approach to it.

La Encantada (Montana Calamajue) (31°00'N., 115°22'W.), the tallest mountain in Baja California, is 3,086m high and rises 28 miles W of Punta San Felipe. This mountain has a whitish appearance with a jagged summit and is very conspicuous.

3.32 Roca Consag (31°07'N., 114°29'W.), a small and high islet, lies 18.5 miles E of Punta San Felipe. It has been whitened by the deposits of sea birds and resembles a sailing ship. A light is shown from a round tower, 6m high, standing on this islet. Several detached rocks, up to 8m high, lie up to 0.5 mile W of this islet.

Caution.—The tidal currents cause heavy tide rips to occur in the vicinity of Roca Consag.

Rio Colorado

3.33 Punta Sargento (31°38'N., 114°46'W.), located 37 miles N of Punta San Felipe, is a low point backed by

gradually rising plains. A light is shown from a structure, 9m high, close N of the point. Extensive drying flats and banks extend up to 6 miles seaward from the shore in the vicinity of the point.

The entrance of the Rio Colorado, which extends up to 1,700 miles inland, may be considered to lie between Punta Sargento, on the W side, and Punta Bajo, 27 miles ESE. The inner part of this entrance is fronted by Isla Montague, Isla Pelicano, Isla Gore, and several drying mud flats. The islands are all subject to flooding at HWS or during freshets. A light is shown from a metal tower, 11m high, standing on Isla Montague.

The main entrance channel of the river leads close E of the islands and has a depth of 4.6m as far NW as Philips Point, 25 miles above the mouth. Above this point, the channel becomes narrow and tortuous, and navigation is more difficult.

The mud flats lying in the mouth of the river are constantly shifting and under no circumstances should vessels attempt to use the passages separating them without local knowledge. The river should be entered on the first of the flood tide and departure should be taken on the last of the ebb. The tidal currents run very strongly and attain rates of up to 6 knots at springs. There is no slack water and tidal bores are known to occur at or near the time of springs in the vicinity of Philips Point. The influence of the tides is felt as far as La Bomba, the head of navigation, about 22 miles above Philips Point.